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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,557	03/25/2004	Makoto Iwashima	61355-054	4774

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EXAMINER	
BERHANU, SAMUEL	
ART UNIT	PAPER NUMBER
2838	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/808,557	IWASHIMA ET AL.	
	Examiner	Art Unit	
	Samuel Berhanu	2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 October 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-7 and 10* is/are allowed.

6)☒ Claim(s) *8 and 9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura et al. (US 2003/0015995) in view of Barrella (US 4,871,956).

Regarding Claim 8, Tamura et. al. disclose in Figures 1-8, a battery pack malfunction in a battery pack constituted with a plurality of chargeable/dischargeable cells, comprising a plurality of malfunction detection means (Cuij and Clij), each provided in correspondence to a predetermined number of cells, for detecting an overcharge malfunction in the corresponding predetermined number of cells during an overcharge detection period and an over-discharge malfunction in the corresponding predetermined number of cells during an over-discharge detection period; and a decision-making means(BCU) for making a decision as to whether or not a cell in an overcharge malfunction state or a cell in an over-discharge malfunction state exists based upon a signal input from the malfunction detection means through a single signal line (over charging and over discharging signals are transmitted to the BCU via a single signal wire), wherein: each of the plurality of the malfunction detection means outputs a first signal (H) if an overcharge malfunction is detected in any of the corresponding predetermined number of cells and outputs a second signal (L) if no overcharge

malfunction is detected during the overcharge detection period, outputs the second signal if an over-discharge malfunction is detected in any of the corresponding predetermined number of cells and outputs the first signal if no over-discharge malfunction is detected during the over-discharge detection period, and alternately outputs the output signal during the overcharge detection period and the output signal during the over-discharge detection period to the decision-making means through time sharing (paragraphs 0006, 0010, 0011,0041-0043, 0056-0058 and 0075) Tamura et. al. do not disclose explicitly, a clock means for generating a signal to control a switch means for switching between the first signal and the second signal.. However, Barrella discloses in Figure 1, element 25, a clock means for generating a signal to control a switch means for switching between the first signal and the second signal (see column 2, lines 61-68, and Column 3, lines 1-22). It would have been obvious to a person having ordinary skill in the art at the time of the invention to add a Timing circuit as a switch controlling means as taught by Barrella in order to synchronize the switching and logic functions of the charging detecting apparatus.

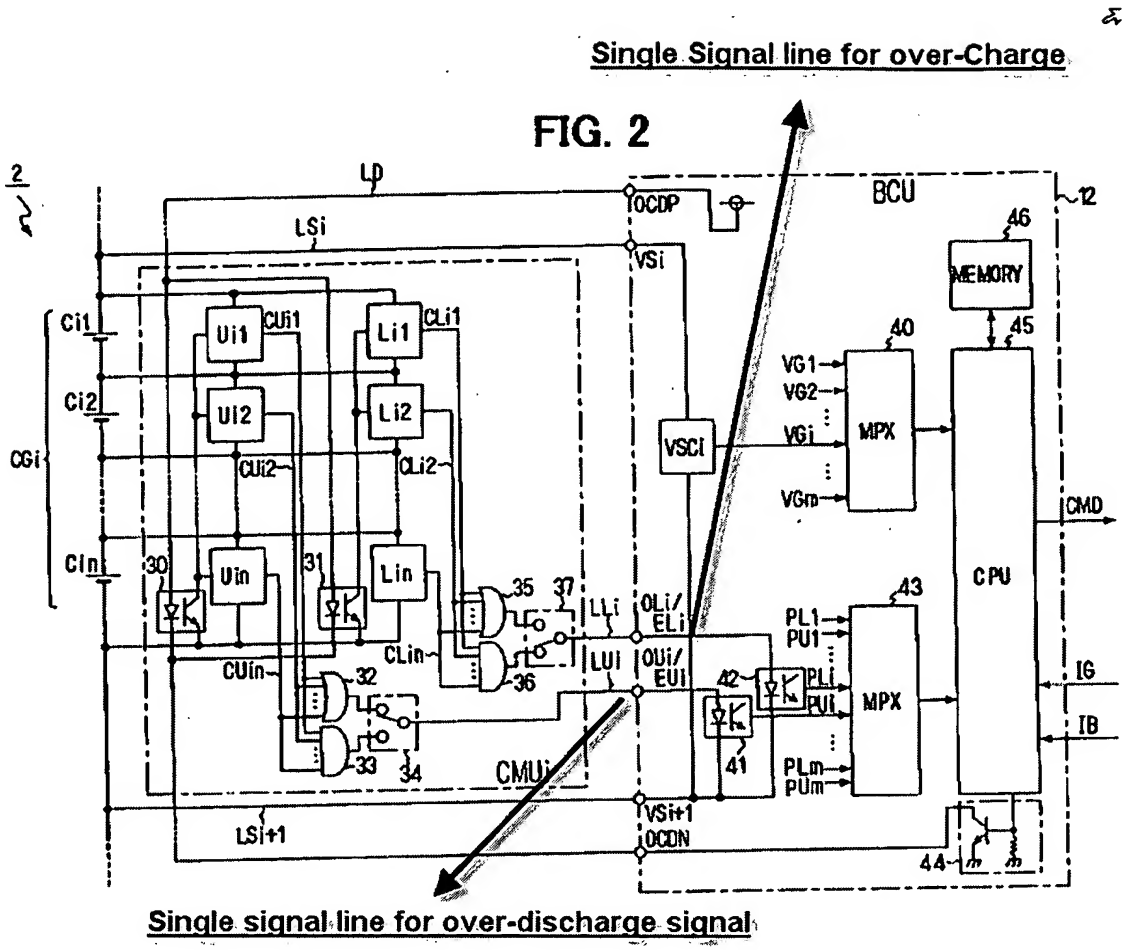
Regarding Claim 9, Tamura et. al. disclose in Figures 1-8, a battery pack malfunction detection method for detecting a malfunction in a battery pack constituted with a plurality of chargeable/dischargeabl- e cells comprising: generating a first signal (H) upon detecting an overcharge malfunction in any of the cells and a second signal (L) if no overcharge malfunction is detected during an overcharge detection period; generating the second signal (L) upon detecting an over-discharge malfunction in any of the cells and the first signal if no over-discharge malfunction is detected during an over-

discharge detection period; outputting the signal generated during the overcharge detection period and the signal generated during the over-discharge detection period alternately through time sharing through a single signal line (over charging and over discharging signals are transmitted to the BCU via a single signal wire); and making a decision as to whether or not there is a cell manifesting an overcharge malfunction or an over-discharge malfunction based upon the signal output through time sharing (paragraphs 0006, 0010, 0011,0041-0043, 0056-0058 and 0075). Tamura et. al. do not disclose explicitly controlling a switch to repeatedly select the first signal and the second signal in alternating sequence; However, Barrella discloses in Figure 1, element 25, controlling a switch to repeatedly select the first signal and the second signal in alternating sequence (see column 2, lines 61-68, and Column 3, lines 1-22). It would have been obvious to a person having ordinary skill in the art at the time of the invention to add a Timing circuit as a switch controlling means as taught by Barrella in order to synchronize the switching and logic functions of the charging detecting apparatus.

Response to Arguments

3. Applicant's arguments with respect to claims 8 and 9 have been considered but are moot in view of the new ground(s) of rejection, or not persuasive.

Applicant argues that there is no teaching in Tamura et. al. a signal input from each of the malfunction detection devices through a single line. This is incorrect. Tamura et. al. disclose a single line for over-charging and a single line for over-discharging signals from the detection devices to the controller (see figure below).



Over charging and over discharging signals are transmitted to the BCU via a single signal wire

Allowable Subject Matter

4. Claims 1-7 and 10 allowed.

For Claim 1: primarily, the prior art of record does not disclose or suggest in the claimed combination: the clock signal generator controls the switch to be repeatedly select the output signal to the signal line during the overcharge detection period and the output

signal to the single signal line during the over-discharging detection period to the decision-making device

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel Berhanu whose telephone number is 571-272-8430. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Karl Easthom can be reached on 571-272-1989. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SB

KARL EASTHOM
SUPERVISORY PATENT EXAMINER